

CLAIMS

We claim:

1. An isolated polypeptide, comprising an amino acid sequence that is at least 70% identical to the amino acid sequence of SEQ ID NO:2, wherein the isolated polypeptide specifically binds with an antibody that specifically binds with a polypeptide consisting of the amino acid sequence of SEQ ID NO:2.

2. The isolated polypeptide of claim 1, wherein the isolated polypeptide comprises an amino acid sequence that is at least 80% identical to the amino acid sequence of SEQ ID NO:2.

3. The isolated polypeptide of claim 1, wherein the isolated polypeptide comprises an amino acid sequence that is at least 90% identical to the amino acid sequence of SEQ ID NO:2.

4. An isolated polypeptide selected from the group consisting of: (a) a polypeptide comprising the amino acid sequence of amino acid residues 32 to 99 of SEQ ID NO:2, (b) a polypeptide comprising the amino acid sequence of amino acid residues 32 to 94 of SEQ ID NO:2, wherein the last amino acid residue of the recited amino acid sequence is amidated, (c) a polypeptide comprising the amino acid sequence of amino acid residues 39 to 99 of SEQ ID NO:2, and (d) a polypeptide comprising the amino acid sequence of amino acid residues 39 to 94 of SEQ ID NO:2, wherein the last amino acid residue of the recited amino acid sequence is amidated.

5. The isolated polypeptide of claim 4, wherein polypeptide (a) or (b) further comprises a signal sequence that resides in an amino-terminal position, wherein the signal sequence consists of amino acid residues 1 to 31 of SEQ ID NO:2.

6. An isolated nucleic acid molecule selected from the group consisting of (a) a nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO:3, (b) a nucleic acid molecule encoding the amino acid sequence of SEQ ID NO:2, and (c) a nucleic acid molecule that remains hybridized following stringent wash conditions to a nucleic acid molecule having the nucleotide sequence of nucleotides 20-316 of SEQ ID NO:1, or the complement of nucleotides 20-316 of SEQ ID NO:1.

7. The isolated nucleic acid molecule of claim 6, wherein any difference between the amino acid sequence encoded by the nucleic acid molecule and the corresponding amino acid sequence of SEQ ID NO:2 is due to a conservative amino acid substitution.

8. The isolated nucleic acid molecule of claim 6, wherein the nucleic acid molecule comprises the nucleotide sequence of nucleotides 113 to 316 of SEQ ID NO:1.

9. A vector, comprising the isolated nucleic acid molecule of claim 8.

10. An expression vector, comprising the isolated nucleic acid molecule of claim 8, a transcription promoter, and a transcription terminator, wherein the promoter is operably linked with the nucleic acid molecule, and wherein the nucleic acid molecule is operably linked with the transcription terminator.

11. A recombinant host cell comprising the expression vector of claim 10, wherein the host cell is selected from the group consisting of bacterium, yeast cell, fungal cell, insect cell, mammalian cell, and plant cell.

12. A method of using the expression vector of claim 10 to produce *Zsig62* protein, comprising culturing recombinant host cells that comprise the expression vector and that produce the *Zsig62* protein.

13. An antibody or antibody fragment that specifically binds with the polypeptide of claim 4.

14. A method of detecting the presence of *Zsig62* RNA in a biological sample, comprising the steps of :

(a) contacting a *Zsig62* nucleic acid probe under hybridizing conditions with either (i) test RNA molecules isolated from the biological sample, or (ii) nucleic acid molecules synthesized from the isolated RNA molecules, wherein the probe has a nucleotide sequence comprising either a portion of the nucleic acid molecule of claim 8, or its complement, and

(b) detecting the formation of hybrids of the nucleic acid probe and either the test RNA molecules or the synthesized nucleic acid molecules,

wherein the presence of the hybrids indicates the presence of *Zsig62* RNA in the biological sample.

15. The method of claim 14, wherein the biological sample is obtained from tissue selected from the group consisting of lung, uterus, breast, fallopian tube, ovary, and gall bladder.

16. A method of detecting the presence of *Zsig62* in a biological sample, comprising the steps of:

- (a) contacting the biological sample with an antibody, or an antibody fragment, of claim 13, wherein the contacting is performed under conditions that allow the binding of the antibody or antibody fragment to the biological sample, and
- (b) detecting any of the bound antibody or bound antibody fragment.

17. The method of claim 16, wherein the biological sample is obtained from tissue selected from the group consisting of lung, uterus, breast, fallopian tube, ovary, and gall bladder.

18. An anti-idiotype antibody, or anti-idiotype antibody fragment, that specifically binds with the antibody or antibody fragment of claim 13.

19. A method of detecting a tumor in a human subject, comprising the steps of:

- (a) contacting a *Zsig62* nucleic acid probe under hybridizing conditions with a test sample comprising either
 - (i) RNA molecules isolated from a biological sample of the human subject, wherein the biological sample is suspected of containing tumor cells, or
 - (ii) nucleic acid molecules synthesized from the isolated RNA molecules,

wherein the nucleic acid probe has a nucleotide sequence comprising either a portion of the nucleotide sequence of the nucleic acid molecule of claim 8, or its complement, and wherein the biological sample is obtained from a tissue selected from the group consisting of lung, uterus, breast, fallopian tube, ovary, and gall bladder, and

(b) detecting the formation of hybrids of the nucleic acid probe and the test sample,
wherein the absence of hybrids indicates the presence of a tumor in the tissue obtained from the human subject.